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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,432	08/15/2006	Michele Ludovico	09952.0070	9491

22852 7590 09/28/2009

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EXAMINER	
MAPA, MICHAEL Y	
ART UNIT	PAPER NUMBER
2617	

MAIL DATE	DELIVERY MODE
09/28/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/589,432	LUDOVICO ET AL.	
	Examiner	Art Unit	
	Michael Mapa	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *24-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *24-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/08/09 has been entered.

Response to Amendment

2. The applicant has amended the following:

Claims: 24 have been amended.

Claims: 25-47 have not been amended.

Claims: 1-23 have been cancelled.

With regards to the 112 rejection on the previous office action, the applicant has provided arguments and cited in the specification that the computer readable medium is a disk. Therefore the examiner withdraws the 112 rejection from the previous office action.

Response to Arguments

3. Applicant's arguments with respect to claims 24-47 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 24-27, 29, 36 and 44-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al. (US Patent Publication 2004/0127224 herein after referenced as Furukawa) in view of O'Byrne et al. (US Patent 6549781 herein after referenced as O'Byrne).

Regarding claim 24, Furukawa discloses "A method for selecting a subset of sites within a whole set of candidate sites for activating one or more radio stations in a telecommunications network" **(Paragraph [0024] of Furukawa, wherein Furukawa discloses having a plurality of base station candidate locations given and installing a base station in anyone of these base station candidate location based on a predetermined objective function).** Furukawa discloses "comprising the steps of: building an initial solution comprising a subset of sites obtained by starting from a

potential network configuration comprising as active the whole set of candidate sites" **(Paragraphs [0024] & [0062] - [0063], wherein Furukawa discloses having a plurality of candidate locations and excluding location candidate points where the base station is impossible to install and wherein no traffic occurs, therefore the subset of the sites are the ones where the base station is able to be installed).** Furukawa discloses "wherein the initial solution comprises compulsorily active cells corresponding to already active cells in the physical network" **(Paragraph [0068] of Furukawa, wherein Furukawa discloses cells of already installed base stations, therefore active cells).** Furukawa discloses "and optimising the initial solution by activating "inactive" sites and/or deactivating "active" sites, in order to minimise a predetermined cost function for the solution" **(Fig. 2 & Paragraphs [0078]-[0079] & [0105] & [0122] of Furukawa, wherein Furukawa discloses activating each candidate location for a base station until the traffic coverage ratio is greater than the required traffic coverage ratio as well as disclosing deleting useless base stations so as to have a least sufficient number of base station).** Furukawa discloses "said steps of building and optimising the initial solution being adapted to define solutions having a geographic coverage wider than a predefined minimum" **(Fig. 6 of Furukawa, wherein Furukawa discloses a new base station being added z2-9 having its own coverage area that adds to the existing coverage area of the network, therefore the geographic coverage area with the new base station is wider than the previous coverage area or a predefined minimum).** Furukawa discloses "and being adapted to manage an amount of traffic greater than a predefined

minimum value of expected traffic" **(Fig. 2 & Paragraph [0079] of Furukawa, wherein Furukawa discloses activating each candidate location for a base station until the traffic coverage ratio is greater than the required traffic coverage ratio).**

Furukawa fails to disclose "wherein the predetermined cost function includes a term pointing out the presence of pilot pollution in the system."

In a related field of endeavor, O'Byrne discloses "wherein the predetermined cost function includes a term pointing out the presence of pilot pollution in the system" **(Column 4, Lines 46-56 of O'Byrne, wherein O'Byrne discloses a pilot management process that identifies areas of possible problems with pilot pollution and providing a list of base stations that have a ratio of pilot channel power relative to the interference above a threshold).**

Therefore it would have been obvious to one of ordinary skill in the art to modify the invention of Furukawa to incorporate the teachings of O'Byrne for the purpose of improving the system design method by providing the designer with a trade-off between accuracy, speed of calculation and generality of results **(Column 4, Lines 30-32 of O'Byrne)** and to be able to identify problem areas such as areas of possible problems for pilot pollution **(Column 4, Lines 46-48 of O'Byrne)** so that the trade off between performance and quality in view of cost and redundancy is optimized.

Furukawa in view of O'Byrne discloses "and wherein at least one of the "active" sites is deactivated based on the term pointing out the presence of pilot pollution" **(Paragraph [0119] & [0122] of Furukawa & Column 4, Lines 45-56 of O'Byrne, wherein Furukawa discloses deeming a base station as useless and deleting the**

useless base station if the network is above a given cost function criteria without the deleted base station and wherein O'Byrne discloses identifying base station that provide pilot pollution problems to the network, therefore such base station having pilot pollution problems to the network is deemed as useless and should be deleted as taught by Furukawa).

Regarding claim 25, Furukawa in view of O'Byrne discloses "The method according to claim 24, wherein said step of optimising comprises the steps of: i) generating a neighborhood of solutions of the current solution by activating "inactive" sites and/or by deactivating "active" sites" **(Fig. 2 & Fig. 3 & Paragraph [0024] & [0122] of Furukawa, wherein Furukawa discloses having a plurality of candidate sites and installing a base station on the candidate site having the predetermined cost function criteria and deleting a base station that is deemed as useless).** Furukawa in view of O'Byrne discloses "ii) computing a predetermined cost function of solutions belonging to the neighborhood and selecting a best solution of the neighborhood as current solution, depending on the respective cost values" **(Paragraph [0072] of Furukawa, wherein Furukawa discloses the objective-function of which the value becomes maximum is selected from all the recorded ones to decide where to install the base station).** Furukawa in view of O'Byrne discloses "iii) determining a set of solutions in a current solution neighborhood" **(Fig. 3 & Paragraph [0070] of Furukawa, wherein Furukawa discloses recording each objective function at the corresponding candidate points).** Furukawa in view of O'Byrne discloses "and iv) iteratively applying steps i) - iii) until a solution whose cost is lower

than a pre-determined value is obtained within said set of solutions and designating as final solution one among the obtained solutions within said set of solutions" **(Figs. 2 & 3 & Paragraphs [0072] of Furukawa, wherein Furukawa discloses repeating the steps if A<N and continues to disclose repeating the steps for each base station having channels 1-4 as well as disclosing selecting the maximum of the recorded ones, therefore each base station candidate site has to repeat the solutions until the cost is lower than the predetermined value which in this case is 5, since each cost for the candidate point and channel only goes up to 4 before it moves on to the next candidate point).**

Regarding claim 26, Furukawa in view of O'Byrne discloses "The method according to claim 25, comprising the steps of: verifying, upon each iteration, that in the set of solutions in the current solution neighborhood at least one solution has a geographic coverage area greater than the predefined minimum coverage area" **(Fig. 6 of Furukawa, wherein Furukawa discloses a new base station being added z2-9 having its own coverage area that adds to the existing coverage area of the network, therefore the geographic coverage area with the new base station is wider than the previous coverage area or a predefined minimum).** Furukawa in view of O'Byrne discloses "and is adapted to manage an amount of traffic greater than the predefined minimum value of expected traffic" **(Fig. 2 & Paragraph [0079] of Furukawa, wherein Furukawa discloses activating each candidate location for a base station until the traffic coverage ratio is greater than the required traffic coverage ratio).** Furukawa in view of O'Byrne discloses "and in case such check is not

satisfied for a predefined number of iterations, building a solution satisfying these conditions through a random activation of one or more cells/sites starting from the current solution and consequently returning to step i) of generating the neighborhood of solutions applied to a thereby built solution" **(Fig. 2 & Paragraph [0079] of Furukawa, wherein Furukawa discloses checking each candidate location for a suitable location for base station installment until the traffic coverage ratio goes over a traffic coverage ratio threshold).**

Regarding claim 27, Furukawa in view of O'Byrne discloses "The method according to claim 25, wherein the predefined minimum coverage area and the predefined minimum expected traffic are defined depending on the coverage area and traffic guaranteed by the potential network configuration" **(Paragraphs [0103]-[0105] of Furukawa).**

Regarding claim 29, Furukawa in view of O'Byrne discloses "The method according to claim 28, wherein the step of determining the set of neighborhood solutions comprises at least one of the following steps: storing the best solution in terms of cost that shows a geographic coverage area that is greater than said minimum coverage area and is adapted to manage an amount of traffic that is greater than said minimum expected traffic value" **(Figs. 2 & 6 & Paragraphs [0070]-[0072] & [0079] of Furukawa, wherein Furukawa discloses computing and recording the value of the objective function and selecting the maximum value among all the recorded ones to decide to locate the base station and selecting the base station candidate that meets the criteria).**

Regarding claim 36, Furukawa in view of O'Byrne discloses "The method according to claim 25." **The examiner rejects claim 36 with the same arguments provided above (see claim 26).**

Regarding claims 44 – 47, Furukawa in view of O'Byrne discloses "a processing system, a computer readable medium encoded with a computer program product and a method for planning a telecommunications network for selecting a subset of sites within a set of candidate sites for activating one or more radio stations in a telecommunications network" **(Paragraph [0021] of Furukawa). The examiner rejects claims 44-47 with the same arguments provided above (see claim 24).**

6. Claims 28 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al. (US Patent Publication 2004/0127224 herein after referenced as Furukawa) in view of O'Byrne et al. (US Patent 6549781 herein after referenced as O'Byrne) and further in view of Vasudevan et al. (US Patent 6539221 herein after referenced as Vasudevan).

Regarding claim 28, Furukawa in view of O'Byrne discloses "The method according to claim 27." Furukawa in view of O'Byrne fails to explicitly recite "wherein solutions are allowed for which the coverage area and the amount of managed traffic related to the selected subset of sites are included within a threshold of the predefined requirements of minimum coverage area and minimum expected traffic" **(Paragraph [0079] of Furukawa).**

Furukawa in view of O'Byrne fails to explicitly recite "relaxed constraints" and "a relaxation threshold of the predefined requirements of minimum coverage area and minimum expected traffic."

In a related field of endeavor, Vasudevan discloses "relaxed constraints" and "a relaxation threshold of the predefined requirements of minimum coverage area and minimum expected traffic" **(Column 8, Lines 57-67 & Column 9, Lines 7-17 of Vasudevan, wherein Vasudevan discloses having a maximum traffic capacity to provide GOS and a minimum coverage threshold, therefore a relaxed constraint and a relaxation threshold).**

Therefore it would have been obvious to one of ordinary skill in the art to modify the invention of Furukawa in view of O'Byrne to incorporate the teachings of Vasudevan of having a maximum traffic threshold and minimum coverage threshold as well as cell splitting for the purpose of improving the network performance by providing a Grade of Service GOS and Quality of Service QOS to the network **(Column 8, Lines 64 - Column 9, Lines 1-3 of Vasudevan).**

Regarding claim 30, Furukawa in view of O'Byrne discloses "The method according to claim 24, wherein the initial solution comprises the cells belonging to a predefined list of compulsorily active cells" **(Paragraph [0120] of Furukawa, wherein Furukawa discloses having already installed base stations (active cells)).**

Furukawa in view of O'Byrne discloses fails to explicitly recite "and the cells deemed as "not able to be turned off" due to a higher cell load than a predefined threshold load in the potential network configuration."

In a related field of endeavor, Vasudevan discloses "and the cells deemed as "not able to be turned off" due to a higher cell load than a predefined threshold load in the potential network configuration" **(Column 8, Lines 57-67 & Column 9, Lines 7-17 of Vasudevan, wherein Vasudevan discloses having a maximum traffic capacity to provide GOS and uses cell splitting to reduce the transmitted power until each site provides GOS, therefore a cell that has a higher cell load than a predefined threshold).**

Therefore it would have been obvious to one of ordinary skill in the art to modify the invention of Furukawa in view of O'Byrne to incorporate the teachings of Vasudevan of having a maximum traffic threshold and minimum coverage threshold as well as cell splitting for the purpose of improving the network performance by providing a Grade of Service GOS and Quality of Service QOS to the network **(Column 8, Lines 64 - Column 9, Lines 1-3 of Vasudevan).**

Regarding claim 31, Furukawa in view of O'Byrne and further in view of Vasudevan discloses "The method according to claim 30, wherein, in case said initial solution does not have a coverage area that is greater than said minimum area and an amount of traffic that is greater than said minimum traffic value, said solution is enriched by additionally including the cells deemed in the "able to be turned off" status due to a lower cell load than a predefined threshold load in the potential network configuration, but not having in such configuration any adjacent cell in soft hand-over" **(Fig. 2 & Fig. 11 & Paragraphs [0120] - [0121] of Furukawa, wherein Furukawa discloses the**

traffic coverage is recomputed and is identical to the processing of step Z0-8 of Fig. 2).

7. Claims 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al. (US Patent Publication 2004/0127224 herein after referenced as Furukawa) in view of O'Byrne et al. (US Patent 6549781 herein after referenced as O'Byrne) in view of Vasudevan et al. (US Patent 6539221 herein after referenced as Vasudevan) and further in view of Gustafsson (US Patent Publication 2003/0087641 herein after referenced as Gustafsson).

Regarding claim 32, Furukawa in view of O'Byrne and further in view of Vasudevan discloses "The method according to claim 31, wherein, in case said enriched initial solution does not have a coverage area that is greater than said minimum area and an amount of traffic that is greater than said minimum traffic value, and the average load of cells in the potential network configuration is greater than a predefined threshold load, said solution is further enriched by additionally including cells having a low load and candidate to "capture" the associated load to cells deemed in the "able to be turned off" status" **(Fig. 2 & Fig. 11 & Paragraphs [0120] - [0121] of Furukawa & Column 8, Lines 68 – 67 & Column 9, Lines 1 – 17 of Vasudevan, wherein Vasudevan discloses cell splitting to ensure that each site provides GOS and QOS).**

Furukawa in view of O'Byrne and further in view of Vasudevan fails to explicitly recite "and having one or more adjacent cells in soft hand- over, in the potential network configuration."

In a related field of endeavor, Gustafsson discloses "and having one or more adjacent cells in soft hand-over, in the potential network configuration" **(Paragraph [0084] of Gustafsson, wherein Gustafsson discloses distinguishing areas such as soft HO with two cells).**

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Furukawa in view of O'Byrne and further in view of Vasudevan to incorporate the teachings of Gustafsson, the motivation for combining being to improve the existing simulation methods for planning and speed up the planning and evaluation process **(Paragraph [0006] of Gustafsson)** and to account for cell breathing due to traffic changes **(Abstract of Gustafsson).**

Regarding claim 33, Furukawa in view of O'Byrne and further in view of Vasudevan discloses "The method according to claim 31, wherein, in case said enriched initial solution does not have a coverage area that is greater than said minimum area and an amount of traffic that is greater than said minimum traffic value, and the average load of cells in the potential network configuration is less than a predefined threshold load, said solution is further enriched by additionally including the most adjacent cells to "capture" the load associated with cells deemed in the "able to be turned off" status" **(Fig. 2 & Fig. 11 & Paragraphs [0120] - [0121] of Furukawa & Column 8, Lines 68 – 67 & Column 9, Lines 1 – 17 of Vasudevan, wherein**

Vasudevan discloses cell splitting to ensure that each site provides GOS and QOS).

Furukawa in view of O'Byrne and further in view of Vasudevan fails to explicitly recite "and having one or more adjacent cells in soft hand- over, in the potential network configuration."

In a related field of endeavor, Gustafsson discloses "and having one or more adjacent cells in soft hand-over, in the potential network configuration" **(Paragraph [0084] of Gustafsson, wherein Gustafsson discloses distinguishing areas such as soft HO with two cells).**

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Furukawa in view of O'Byrne and further in view of Vasudevan to incorporate the teachings of Gustafsson, the motivation for combining being to improve the existing simulation methods for planning and speed up the planning and evaluation process **(Paragraph [0006] of Gustafsson)** and to account for cell breathing due to traffic changes **(Abstract of Gustafsson).**

Furukawa in view of O'Byrne in view of Vasudevan and further in view of Gustafsson discloses "said solution is further enriched by additionally including the most adjacent cells in soft hand-over candidate to "capture" the load associated with cells deemed in the "able to be turned off" status" **(Fig. 2 & Fig. 11 & Paragraphs [0120] - [0121] of Furukawa & Column 8, Lines 68 – 67 & Column 9, Lines 1 – 17 of Vasudevan & Paragraph [0084] of Gustafsson, wherein Vasudevan discloses cell splitting to ensure that each site provides GOS and QOS and wherein Gustafsson**

discloses distinguishing the areas of soft HO with two cells, therefore one of ordinary skill in the art would recognize that the load of the overloaded cell will be captured by a cell that it is in soft HO with for the purpose of maintaining communication for the user while cell breathing/splitting is taking place).

Regarding claim 34, Furukawa in view of O'Byrne in view of Vasudevan and further in view of Gustafsson discloses "The method according to claim 32, wherein, in case said further enriched initial solution does not have a coverage area that is greater than said minimum area and an amount of traffic that is greater than said minimum traffic value, the initial solution is built as solution that minimises the number of active cells among the obtained solutions, starting from the potential network configuration, by deactivating the cells having the lowest coverage area, if, following such deactivation, the remaining coverage area is greater than the predefined minimum area, among a list of cells with which the minimum carried traffic is associated, if, following such deactivation, the remaining carried traffic is greater than the predefined minimum traffic value" **(Paragraph [0122] of Furukawa).**

Regarding claim 35, Furukawa in view of O'Byrne in view of Vasudevan and further in view of Gustafsson discloses "The method according to claim 33, wherein, in case said further enriched initial solution does not have a coverage area that is greater than said minimum area and an amount of traffic that is greater than said minimum traffic value, the initial solution is built as solution that minimises the number of active cells among the obtained solutions, starting from the potential network configuration, by deactivating the cells: having the lowest coverage area, if, following such deactivation,

the remaining coverage area is greater than the predefined minimum area, among a list of cells with which the minimum carried traffic is associated, if, following such deactivation, the remaining carried traffic is greater than the predefined minimum traffic value" **(Paragraph [0122] of Furukawa).**

8. Claims 37-39 and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al. (US Patent Publication 2004/0127224 herein after referenced as Furukawa) in view of O'Byrne et al. (US Patent 6549781 herein after referenced as O'Byrne) and further in view of Gustafsson (US Patent Publication 2003/0087641 herein after referenced as Gustafsson).

Regarding claim 37, Furukawa in view of O'Byrne discloses "The method according to claim 36." Furukawa in view of O'Byrne fails to explicitly recite "wherein an activation move comprises the activation of a useful cell in order to remove coverage and/or traffic holes, or having a high adjacency parameter value in soft hand-over toward cells having high cell load values."

In a related field of endeavor, Gustafsson discloses "wherein an activation move comprises the activation of a useful cell in order to remove coverage and/or traffic holes, or having a high adjacency parameter value in soft hand-over toward cells having high cell load values" **(Paragraphs [0067] & [0084] & [0109]-[0110] of Gustafsson, wherein Gustafsson discloses soft HO with two cells and splitting cells into smaller ones to cover the whole area in a high load situation).**

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Furukawa in view of O'Byrne to incorporate the teachings of Gustafsson, the motivation for combining being to improve the existing simulation methods for planning and speed up the planning and evaluation process **(Paragraph [0006] of Gustafsson)** and to account for cell breathing due to traffic changes **(Abstract of Gustafsson).**

Regarding claim 38, Furukawa in view of O'Byrne discloses "The method according to claim 36, wherein a deactivation move comprises the deactivation of a cell having a lower cell load" **(Paragraph [0120] of Furukawa, wherein Furukawa discloses deleting a base station if the total coverage ratio without the base station is higher than the threshold ratio).**

Furukawa in view of O'Byrne fails to explicitly recite "and having a high adjacency parameter value in soft hand-over toward at least one active cell having a cell load value that is lower than a pre-established maximum value."

In a related field of endeavor, Gustafsson discloses "and having a high adjacency parameter value in soft hand-over toward at least one active cell having a cell load value that is lower than a pre-established maximum value" **(Paragraph [0084] & [0106] of Gustafsson, wherein Gustafsson discloses distinguishing an area of a soft HO with two cells and having a threshold for cell load wherein Gustafsson discloses a cell with a high cell load, therefore there is a threshold (pre-established maximum value) to indicate a high cell load).**

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify the invention of Furukawa in view of O'Byrne to incorporate the teachings of Gustafsson, the motivation for combining being to improve the existing simulation methods for planning and speed up the planning and evaluation process **(Paragraph [0006] of Gustafsson)** and to account for cell breathing due to traffic changes **(Abstract of Gustafsson).**

Therefore, Furukawa in view of O'Byrne and further in view of Gustafsson discloses "the deactivation of a cell having a lower cell load and having a high adjacency parameter value in soft hand-over toward at least one active cell having a cell load value that is lower than a pre-established maximum value" **(As indicated above, when the base station is deleted, the traffic for the deleted base station will be covered by the adjacent cell having soft handover with the deleted cell and having the capacity to cover the traffic).**

Regarding claim 39, Furukawa in view of O'Byrne discloses "The method according to claim 36, wherein a deactivation move comprises deactivation of a cell and for which the ratio between carried traffic by current active cells and placed in pilot pollution by the cell under deactivation, and globally carried traffic by the cell under deactivation, is maximum" **(Paragraphs [0120] & [0122] of Furukawa & Column 4, Lines 46-56 of O'Byrne, wherein Furukawa discloses deleting useless base stations so as to have a least sufficient number of base station and only considering a base station useless and deleting it if the deletion of the base station meets a network criteria and wherein O'Byrne discloses a pilot management process that identifies areas of possible problems with pilot**

pollution and providing a list of base stations that have a ratio of pilot channel power relative to the interference above a threshold, therefore by incorporating the criteria of deleting the base stations that provide the maximum pilot pollution in the network, the network ensures the communication quality of the base stations remaining in the network).

Furukawa in view of O'Byrne fails to explicitly recite "having in soft hand-over adjacency at least one cell able to support the load."

In a related field of endeavor, Gustafsson discloses "having in soft hand-over adjacency at least one cell able to support the load." **(Paragraph [0084] & [0067] of Gustafsson, wherein Gustafsson discloses distinguishing an area of a soft HO with two cells and wherein cell A is used if cell B is heavily loaded to support the load form cell B, therefore the areas/cells with soft HO to the heavily loaded cell are chosen to support the load for the purpose of maintaining the quality of communication of the users when performing the soft handover).**

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Furukawa in view of O'Byrne to incorporate the teachings of Gustafsson, the motivation for combining being to improve the existing simulation methods for planning and speed up the planning and evaluation process **(Paragraph [0006] of Gustafsson)** and to account for cell breathing due to traffic changes **(Abstract of Gustafsson).**

Regarding claim 42, Furukawa in view of O'Byrne discloses "The method according to claim 24, wherein the cost function of a solution is expressed as

representing: the ratio between geographic area not served by a subset of active sites and a served area in a potential network configuration;" **(Paragraph [0068] of Furukawa).** Furukawa in view of O'Byrne discloses "the ratio between traffic not carried by the subset of active sites and traffic carried in the potential network configuration;" **(Paragraph [0068] of Furukawa).** Furukawa in view of O'Byrne discloses "the deviation of load cells of activated cells, from an ideal cell load;" **(Paragraph [0117] of Furukawa).**

Furukawa in view of O'Byrne fails to explicitly recite "calculating the weighted sum of the plurality of cost functions and the mean square deviation of each cost function". However the examiner maintains that it is obvious for one of ordinary skill in the art to modify the invention to include calculating with the weighted sum and the mean square for the purpose of achieving a more accurate data of what the system requires to be optimized.

Furukawa in view of O'Byrne fails to explicitly recite "deviation of soft hand-over loads of activated cells, from an ideal soft hand-over load."

In a related field of endeavor, Gustafsson discloses "deviation of soft hand-over loads of activated cells, from an ideal soft hand-over load" **(Paragraph [0079] of Gustafsson).**

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Furukawa in view of O'Byrne to incorporate the teachings of Gustafsson, the motivation for combining being to improve the existing simulation methods for planning and speed up the planning and evaluation

process **(Paragraph [0006] of Gustafsson)** and to account for cell breathing due to traffic changes **(Abstract of Gustafsson).**

Regarding claim 43, Furukawa in view of O'Byrne and further in view of Gustafsson discloses "The method according to claim 42." Furukawa in view of O'Byrne and further in view of Gustafsson fails to explicitly recite "wherein the cost function of a solution comprises a further cost item pointing out the ratio between global traffic in pilot pollution associated with the set of active cells in the examined solution and maximum pilot pollution that can be found in the potential network configuration." The combination discloses identifying the areas of possible problems for pilot pollution. Therefore, it would have been obvious to one of ordinary skill in the art to calculate the pilot pollution associated with the set of active cells in the examined solution as it relates to the maximum pilot pollution that can be found in the potential configuration the motivation being to calculate the efficiency of the network as it relates to the potential network configuration.

9. Claims 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa et al. (US Patent Publication 2004/0127224 herein after referenced as Furukawa) in view of O'Byrne et al. (US Patent 6549781 herein after referenced as O'Byrne) and further in view of Walton et al. (US Patent Publication 2003/0123425 herein after referenced as Walton).

Regarding claims 40 & 41, Furukawa in view of O'Byrne discloses "The method according to claim 29."

Furukawa in view of O'Byrne fails to explicitly recite "wherein a "restore" procedure is performed for a solution in case it is impossible to build a non-empty neighborhood of the current solution, in which the best stored solution during said iterations is "restored"."

In a related field of endeavor, Walton discloses a "restore procedure" **(Paragraph 141, wherein Walton discloses a "restore" command for restoration of a back-off factor to its assigned value).**

Therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate the teachings of a "restore" command as taught by Walton. The motivation for the combination is to ensure that a back-up exists for the solutions in cases wherein the user needs to refer back to a previous solution. Furukawa in view of O'Byrne discloses storing the solutions for each candidate locations and then selecting the solution that best satisfies the network criteria **(Paragraph [0079] of Furukawa).** Therefore It would have been obvious to one of ordinary skill in the art to have a restore command for all the solutions whether a best solution or a random solution for the purpose of maintaining an accurate gathering of data which can be used for further reference at a later time in the case when the current solution needs to be replaced.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Mapa whose telephone number is (571)270-5540. The examiner can normally be reached on MONDAY TO THURSDAY 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost can be reached on (571)272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Michael Mapa/
Examiner, Art Unit 2617

/Dwayne D. Bost/
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Art Unit 2617